1. SCOPE

1.1 This specification describes the instrumentation requirements and minimum standard of performance for the PCM telemeter system of Agena/Gemini.

2. APPLICABLE DOCUMENTS

2.1 The following documents are to be considered as part of this specification to the extent indicated:

A0051823 C Performance Specification for PCM Telemetry and multiplexing Equipment.

1357156 Wiring Diagram Instrumentation.

2.2 This specification supersedes all previously issued documents that specify instrumentation requirements.

2.3 The following documents are for reference only:

1348315 PAM Multiplexer

1348320 PCM Encoder

1348321 Controller

1346473 Power Converter

1357152 Signal Conditioner Aft

1357153 Signal Conditioner Forward

3. REQUIREMENTS

3.1 The telemeter instrumentation system shall conform to the requirements which are a part of this specification.

4. QUALITY ASSURANCE PROVISION

4.1 The PCM telemeter system shall conform to A0-51823C.

5. NOTES

5.1 PCM System No.

VHF Xmtr. #1 Serial

VHF Xmtr. #2 Serial

5.2 Input plug pin connections are indicated as follows:

PLUG	PIN
J2	C

5.3 Subsystems supplying correct voltage to telemeter without external transducer or signal conditioning are listed as follows:

Transducer Range	Volt. Source or Transducer
0-5V	SS/C

5.4 Calibration curves conforming to Data Service Department requirements shall be supplied for all measurements.

5.5 All unused channels shall be grounded.

5.6 Reference Sheets

a. Abbreviations, Mfg. and Measurement.

b. Measurement Reference.

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MEASUREMENT REFERENCE

MEAS. NO.	MEASUREMENT	PAGE	NOMINAL READING
A4	Accel. Y #1 (TDA)	10	
A5	Accel. Z #2 (AFT)	11	
A9	Accel. X #1 (TDA)	11	
A14	A/A Separation Monitor	13	
A20	Fwd. Compt. Pressure	13	
A21	Aft. Compt. Pressure	12	
A52	Nose Cone Separation Monitor	11	
A150	Shear Panel Temp. #1	14	
A151	Shear Panel Temp. #2	14	
A152	Shear Panel Temp. #3	15	
A153	Shear Panel Temp. #4	15	
A154	+Z Aft. Bulkhead Temp.	14	
A155	-Z Aft. Bulkhead Temp.	14	
A156	+Y SPS Mod. Bulkhead Temp.	14	
A157	-Y SPS Mod. Bulkhead Temp.	14	
A158	+Y Mod. Radiation Shd. Temp.	15	
A159	-Y Mod. Radiation Shd. Temp.	15	
A210	H/S Fairing Temp.	14	
A388	Docking Adapter Temp. #1	14	
A389	Docking Adapter Temp. #2	14	
A390	Docking Adapter Temp. #3	15	
A391	Docking Adapter Temp. #4	15	
A392	Docking Adapter Temp. #5	14	
A393	Docking Adapter Temp. #6	15	
A394	Docking Adapter Temp. #7	15	
A522	Accel. Y #2 (Aft)	11	
A523	Accel. Z #1 (TDA)	10	
AD40	Shroud Temp. #1	15	
AD41	Shroud Temp. #2	15	
AD42	Shroud Temp. #3	16	
AD43	Shroud Temp. #4	16	
AD44	Shroud Temp. #5	17	
AD45	Shroud Temp. #6	17	
B1	Fuel Pump Inlet Press.	13	10-50 psi
B2	Ox. Pump Inlet Press.	10	10-50 psi
B3	Turbine Man. Press. #1	12	450 psi
B7	Helium Supply Press.	12	3000 psi
B8	Ox. Tank Press.	11	8-53 psi
B9	Fuel Tank Press.	10	10-55 psi
B10	Comb. Chamb. Press. #2	10	500 psi
B11	Ox. Venturi Inlet Press.	10	1000 psi
B12	Fuel Venturi Inlet Press.	11	1000 psi

MEAS. NO.	MEASUREMENT	PAGE	NOMINAL READING
B17	Engine Valve Tell-Tales	10	
B31	Fuel Pump Inlet Temp.	15	75°F
B32	Ox. Pump Inlet Temp.	15	75°F
B35	Turbine Speed	21	
B68	Helium Sph. Temp.	14	50°F
B71	Ox. Pump Lip Seal Press.	15	17 psi
B82	Fuel Valve Actuator Press.	10	1000 psi
B83	Thrust Chamb. Skin Temp.	14	500°F
B91	Comb. Chamb. Press. #1	10	500 psi
B96	Fuel Tank Temp. #1	16	
B97	Fuel Tank Temp. #2	16	
B130	Ox. & Fuel S/O Valves Open/Closed	11	
B131	He. Ctl.-Ox. Pneu. Valve On/Off	10	
B132	Turbine Manifold Press. #2	11	450 psi
B136	Ox. Tank Temp. +Z	16	
B137	Ox. Tank Temp. -Z	16	
B141	Ox. Start Tank Temp.	14	75°F
B142	Fuel Start Tank Temp.	14	75°F
B145	Ox. Start Tank Press.	12	
B146	Fuel Start Tank Press.	12	
B148	Ox. Injector Press.	10	600 psi
B184	Nozzle Ext. Skin Temp. #1	16	
B185	Nozzle Ext. Skin Temp. #2	16	
B200	+Y Gas Sphere Pressure	13	4000 psi
B201	-Y Gas Sphere Pressure	13	4000 psi
B202	+Y Tank Manifold Pressure	12	200 psi
B203	-Y Tank Manifold Pressure	13	200 psi
B204	+Y Ox. Feed Pressure	11	200 psi
B205	-Y Ox. Feed Pressure	12	200 psi
B208	+Y Fuel Feed Pressure	12	200 psi
B209	-Y Fuel Feed Pressure	11	200 psi
B212	Unit I, +Y Chamber Press.	11	80 psi
B213	Unit I, -Y Chamber Press.	11	80 psi
B214	Unit II, +Y Chamber Press.	11	96 psi
B215	Unit II, -Y Chamber Press.	11	96 psi
B216	+Y N_2 Sphere Temp.=	15	50°F
B223	+Y & -Y SPS Start Valve On/Off	10	
B224	Unit I, +Y & II, +Y Pilot Sol. On/Off	10	
B225	Unit I, -Y & II, -Y Pilot Sol. On/Off	10	
B233	Unit I, +Y Biprop Valve Temp.	15	40°F
B234	Unit I, -Y Biprop Valve Temp.	16	40°F
B235	Unit II, +Y Biprop Valve Temp.	16	40°F
B236	Unit II, -Y Biprop Valve Temp.	17	40°F
B238	Unit I, +Y & I, -Y Biprop Valve Heaters	14	
B240	Unit I, +Y Mod. Injector Temp.	15	
B241	Unit I, -Y Mod. Injector Temp.	16	

MEAS. NO.	MEASUREMENT	PAGE	NOMINAL READING
B246	Skin Temp. Unit I, +Y	16	2000°F
B247	Skin Temp. Unit I, -Y	16	2000°F
B248	Skin Temp. Unit II, +Y	17	1700°F
B249	Skin Temp. Unit II, -Y	17	1700°F
B253	-Y N_2 Sphere Temp.	15	50°F
B256	Ox. Tank Heaters +Y & -Y On/Off	14	
B258	Fuel Tank Heaters +Y & -Y On/Off	14	
B260	Ox. Feed Line Temp. Unit I, +Y	14	50°F
B261	Ox. Feed Line Temp. Unit II, +Y	15	50°F
B262	Ox. Feed Line Temp. Unit I, -Y	15	50°F
B263	Ox. Feed Line Temp. Unit II, -Y	16	50°F
B264	Units II, +Y & -Y, Biprop Valve Heater On/Off	15	
B266	Fuel Feed Line Temp. Unit I, +Y	14	
B267	Fuel Feed Line Temp. Unit II, +Y	14	
B268	Fuel Feed Line Temp. Unit I, -Y	14	
B269	Fuel Feed Line Temp. Unit II, -Y	17	
C2	+28 VDC Reg. Supply #2	16	
C3	+28 VDC Reg. Supply #1	14	
C4	Battery Buss Current	14	
C5	-28 VDC Reg. Supply #1	14	
C6	Battery Buss Voltage	10	
C10	Battery Case Temp. #1	17	
C13	Battery Case Temp. #2	17	
C21	400 cps 3 Ø Inv. Temp.	16	
C22	Battery Case Temp. #3	17	
C31	400 cps 3 Ø Inv. Ø AB	15	
C32	400 cps 3 Ø Inv. Ø CB	14	
C35	400 cps 1 Ø Pwr. Supply	15	
C121	-28 VDC Reg. Supply #2	16	
C130	Amp. Hr. Meter 10-30	12	
C131	Amp. Hr. Meter 40-120	12	
C132	Amp. Hr. Meter 160-480	12	
C163	400 cps 1 Ø Inv. Temp.	17	
C185	Reg. D.C. Conv. #1 Temp.	16	
C186	Reg. D.C. Conv. #2 Temp.	17	
D5	Hyd. Oil Return Line Temp.	12	
D15	Heater Cycling Monitor	15	
D32	Hyd. Oil Low Press.	11	
D37	Booster Cmd. Monitor	13	
D41	Pitch H/S Output	11	

MEAS. NO.	MEASUREMENT	PAGE	NOMINAL READING
D42	Roll H/S Output	10	
D46	#1 Valve Cluster Temp.	15	
D47	#2 Valve Cluster Temp.	17	
D57	Control Gas Reg. Press. #2	12	
D58	Control Gas Reg. Press. #1	11	
D59	Control Gas Supply Man. Press.	11	
D60	Hyd. Oil High Press.	10	
D65	Yaw Gyro Torque Rate	12	
D66	Roll Gyro Torque Rate	12	
D68	Pitch Hyd. Actuator Pos.	10	
D69	Yaw Hyd. Actuator Pos.	11	
D70	Control Gas Supply Temp.	11	
D72	Pitch Pos. Gyro	12	
D73	Pitch Gyro Torque Rate	13	
D74	Yaw Pos. Gyro	11	
D75	Roll Pos. Gyro	11	
D85	V/M Elec. Oven Temp.	17	
D86	V/M Cutoff	11	
D87	V/M Accel. Oven Temp.	15	
D150	Gas Jet 2 & 5 Mon.	10	
D151	Gas Jet 1 & 3 Mon.	10	
D152	Gas Jet 4 & 6 Mon.	10	
H6	Clock Temp.	16	
H7	Memory Temp.	16	
H27	Programmer B+ #3 (+60)	16	
H28	Programmer B+ #2 (+40)	16	
H29	Programmer B+ #1 (+5.7)	15	
H30	Programmer B+ #4 (-5.7)	16	
H32	Programmer Memory Readout	10	
H33	Programmer Pwr. Sup. Temp.	17	
H34	Command Function Status Mon.	21	
H35	Command Controller (+6)	16	
H38	Message Acceptance Pulse (MAP)	10	
H47	S-Band Input PRF Mon.	14	
H48	S-Band Output PRF Mon.	14	
H49	S-Band Transponder Temp.	15	
H52	Coder Lock-On Monitor	17	
H57	UHF Rcvr. B+	17	
H59	UHF Rcvr. Temp.	17	
H60	UHF Rcvr. Signal Level	16	
H62	VHF Xmtr. #1 Case Temp.	17	
H63	VHF Xmtr. #2 Case Temp.	17	
H101	Safe-Arm-Fire (Dest. #1)	16	
H103	Safe-Arm-Fire (Dest. #2)	17	
H165	Veh. Time Word	21	

MEAS. NO.	MEASUREMENT	PAGE	NOMINAL READING
H171	UHF Phase Lock Mon.	15	
H172	C-Band Transponder Temp.	15	
H173	C-Band Input PRF Mon.	15	
H174	C-Band Output PRF Mon.	15	
H180	PCM Tray Temp.	17	
H331	L-Band RF Pwr. Level	17	
H333	L-Band Xmtr. Tube Temp.	17	
H334	L-Band Face Plate Temp.	17	
H347	L-Band Boom Ant. Extended	16	
H354	Dest. Rcvr. #1 Sig. Level	17	
H357	Dest. Rcvr. #1 Case Temp.	16	
H364	Dest. Rcvr. #2 Sig. Level	16	
H367	Dest. Rcvr. #2 Case Temp.	17	
H379	Docking Cone Unrigidized	16	
H380	Docking Cone Rigidized	17	
H381	Docking Cone Unlatched	17	

PCM - TELEMETER

Link No. 1 Multiplexer Main Sample Rate 16 No. Chan. 128

Chan.	MEASUREMENT	Meas. No.	Xducer Range	Volt Source or Xducer Type	Mfg	Xducer Loc. Sta/Quad	Input Plug	Installation Dwg. No.
1	Sync	NA				—		
2	Sync	NA				—		
3	Sync	NA				—		
4	Message Acceptance Pulse	H-38	0-5V.	SS/H		—	J3-t	MAP
5	Comb. Chamb. Pressure #1	B-91	0-750 PSIG	1616163-21	W	Pot 33	2.5% J3-CC	01100000
6	Accel. Z #1 (TDA)	A-523	±1.5g	1616462 1615367-11	S	Pot 35	20% J4-U	01001100
7	Battery Buss Voltage	C-6	0-5V	SS/C		Pot 9	40% J5-S	10100101
8	Gas Jet #1 & #3 Monitor	D-151	0-5V	SS/D		POT 5	95% J5-FF	10101111
9	Units I and II Pilot Sol-Y	B-225	0-5V	1B=2.0V 2B=3.0V		Pot 37 Aft Dist Box	60% J4-EE	01101001
10	Ox. Pump Inlet Pressure	B-2	0-100 PSIG	1616163-9	W	Pot 35	20 J4-Y	See ch 6
11	+Y and -Y Start Valve (SPS)	B-223	0-5V	#1=3.0V #2=2.0V		Aft Dist Box	J4-1	Ground
12	Comb. Chamb. Press. #2	B-10	475-550 PSIG	1616332-5	W	Pot 35	20% J4-X	See ch 6
13	Units I & II Pilot Solenoid +Y	B-224	0-5V	1A=3.0V 2A=2.0V		Aft Dist Box	67% J5-HH	01100101
14	Fuel Tank Pressure	B-9	0-60 PSIG	1616163-3	W	POT 21	67% J5-V	See ch 13
15	Gas Jet #2 & #5 Monitor	D-150	0-5V	SS/D		POT 5	J5-D	See ch 8
16	Sub Frame "A"	NA				—		SF A
17	Sub Frame "B"	H-32	Programmer			—		SF B
18	Sub Frame "B"	H-32	Memory			—		SF B
19	Sub Frame "B"	H-32	Readout			—		SF B
20	Accel. Y #1 (TDA)	A-4	±1.5g	1616462 1615367-11	S	Pot 35	20% J3-E	See ch 6
21	Ox. Injector Pressure	B1&8	0-1000 PSIG	1616164-7	W	Pot 35	20% J3-M	See ch 6
22	Engine Valve Tell-Tales	B-17	0-5V	See TT Breakdown	Engine Delay Relay Box 5		20% J4-A	See ch 16
23	Fuel Valve Actuation Press.	B-82	0-1500 PSIG	1616164-11	W	Pot 35	20 J5-H	See ch 6
24	He. Ctl. & Ox. Pneu. V on off	B-131	0-5V	He" Ox Iso"		Fwd Dist Box	50% J5-W	Ground
25	Ox Venturi Inlet Press.	B-11	0-1500 PSIG	1616164-11	W	Pot 23	53% J4-T	10100001
26	Pitch Hyd. Actuator Pos	D-68	±2.5° 0-5V	SS/D		Pot 35	50% J4-BB	See ch 6
27	Repeat #5	B-91				Pot 33	2.5% J4-i	See ch 5
28	Roll H/S Output	D-42	±4.0° 0-5V	SS/D		Pot 8	50% J4-C	10111110
29						—	J5-d	Ground
30	Gas Jet #4 & #6 Monitor	D-152	0-5V	SS/D		POT 8	50 J5-CC	See ch 8
31	Hyd. Oil High Pressure	D-60	0-4000 PSIG	1461676-1	W	Pot 35	20% J5-C	See ch 6 01001100
32	Sub Frame "A"	NA				—		SF A

LOCKHEED AIRCRAFT CORP.
MISSILES & SPACE COMP.
SUNNYVALE, CALIFORNIA

TITLE:

PCM - TELEMETER

Link No. 1 Multiplexer Main Sample Rate 16 No. Chan. 128

Chan.	MEASUREMENT	Meas. No.	Xducer Range	Volt Source or Xducer Type	Mfg	Xducer Loc. Sta/Quad	Input Plug	Installation Dwg. No.
33	Control Gas Reg. Press #1	D-58	0-120 PSIA	1615046-7	W	Pot #4	80% J3-j	10010011
34	Accel.Y #2 (Aft)	A-522	±1.5g	1616462 1615367-1	S	Pot 35	J3-n	See ch 6
35	Control Gas Supply Manifold Press	D-59	0-4000 PSIG	1616163-3	W	Pot #1	42% J3-HH	01011001
36	Accel Z #2 (Aft)	A-5	±1.5g	1616462 1615367-1	S	Pot 35	J3-b	See ch 6
37	Unit I, + Y Chamber Press	B-212	0-100 PSIG	1616163-9	W	Pot 35	J3-L	See ch 6
38	Control Gas Sup. Temp.	D-70	-50° +150°F	1464001-3		Pot #7	69% J4-S	10110101
39	Unit II, +Y Chamb Pressure	B-214	0-120 PSIG	1616163-11	W	Pot 35	J5-DD	See ch 6
40	Ox & Fuel S/O V. On-Off	B-130	0-5V	See TT Breakdown		Micro Sw On V.	J5-a	Ground
41	Cal. +	NA	4.9V	Telemeter	+4.9	(PBIC3)	J4-s	10101111
42	Yaw Hyd. Act. Position	D-69	±2.5° 0-5V	SS/D		Pot 35	J4-CC	See ch 6
43	Pitch H/S Output	D-41	±40° 0-5V	SS/D		Pot #2	50% J4-z	10111110
44	Ox Tank Pressure	B-8	0-60 PSIG	1616163-3	W	Pot 22	+2 J4-p	10010110
45	Roll Pos. Gyro	D-75	1.00 Volt/Deg 0-5V	SS/D		Pot 21	J5-p	See ch 13
46	Turbine Man. Press. #2	B-132	0-120 PSIA		W	Pot 35	J5-c	See ch 6
47	Message Acceptance Pulse	H-38	0-5V	SS/H		—	J5-Z	MAP
48	Sub Frame "A"	NA				—		SF A
49	Repeat #5	B-91				Pot 33	2.5% J3-AA	See ch 5
50	Repeat #8	D-151				Pot 5	J3-m	See ch 8
51	+Y Ox Feed Press	B-204	0-300 PSIG	1616163-17	W	Pot 35	J3-p	See ch 6
52	Accel. X #1 (TDA)	A-9	±1.5g	1616462 1615367-1	S	—	J3-r	Ground
53	Unit I, -Y Cham Press	B-213	0-100 PSIG	1616163-9	W	Pot 36	J3-a	10100110
54	V/M Cutoff	D-86	0-5V	SS/D		—	J4-n	Ground
55	Unit II, -Y Chamb Press	B-215	0-120 PSIG	1616163-11	W	Pot 36	J5-A	See ch 53
56	Nose Cone Sep Monitor	A-52	0-5V	SS/A		—	J5-f	Ground
57	Repeat #15	D-150				Pot 5	J4-HH	See ch 8
58	Hyd. Oil Low Pressure	D-32	0-100 PSIG	1616163-9	W	Pot 23	53% J4-y	See ch 25
59						—	J4-g	Ground
60	-Y Fuel Feed Pressure	B-209	0-300 PSIG	1616163-17	W	Pot 36	J4-B	See ch 53
61	Yaw Position Gyro	D-74	1.67 Volts/Deg 0-5V	SS/D		Pot 6	J5-W50	~~10111110~~
62	Fuel Venturi In. Press.	B-12	0-1500 PSIG	1616163-11	W	Pot 23	53% J5-b	See ch 25
63						—	J5-Y	Ground
64	Sub Frame "A"	NA				—		SF A

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SUNNYVALE, CALIFORNIA

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Chan.	MEASUREMENT	Meas. No.	Xducer Range	Volt Source or Xducer Type	Mfg	Xducer Loc. Sta/Quad	Input Plug	Installation Dwg. No.
65	Ho. Supply Pressure	B7	0-4000 PSIG	1616164-17 W		Pot 36	J3-i 40%	See ch 53
66	Amp. Hr. Meter 10-30	C-130	0-5V.	SS/C		Pot 36	J3-Y 40%	See ch 53
67	+Y Fuel Feed Pressure	B-208	0-300 PSIG	1616163-17 W		Pot 36	J3-g 40%	See ch 53
68	Amp. Hr. Meter 40-120	C-131	0-5V.	SS/C		Pot 36	J3-C 40%	See ch 53
69	Control Gas Regulated Pres. #2	D-57	0-15 PSIA	1615046-1 W		Pot #5	J3-GG 98%	10101116
70	Repeat #6	A-523				Pot 35	J4-V 20	See ch 6
71	Repeat #5	B-91				Pot 33	J5-x 2.5%	See ch 5
72	Repeat #30	D-152				Pot 5	J5-n 98%	See ch 8
73	Ox. Start Tank Pressure	B-145	0-1500 PSIG	1616315 1616399	MS	—	J3-N	Ground
74	Aft Compartment Press.	A-21	0-15 PSIA	1615046-1 W		Pot 36	J4-r 40%	See ch 53
75	Fuel Start Tank Pressure	B-146	0-1500 PSIG	1616315 1616399	MS	—	J4-Y	Ground
76	Pitch Position Gyro	D-72	1.67 Volts/ ~~0-5V. Deg.~~	SS/D		Pot 2	J4-h 50%	See ch. 43
77						Pot 35	J3-F 67%	See ch 43
78						—	J5-u	Ground
79	Hyd. Oil Return Line T.	D-5	0° 250°F	1616310-1 MS		Pot 37	J5-G 60%	See ch 9
80	Subframe 'A'	NA				—		SFA
81	Turbine Manifold Press. #1	B3	0-750 PSIG	1616163-11 W		Pot 37	J3-K 60%	See ch 9
82	Amp. Hr. Meter 160-480	C-132	0-5V.	SS/C		Pot 37	J3-T 60%	See ch 9
83	-Y Ox. Feed. Press.	B205	0-300 PSIG	1616163-17 W		Pot 37	J3-d 60%	See ch 9
84	Repeat #20	A-4				Pot 35	J3-s 20%	See ch 6
85	Repeat #21	B-148				Pot 35	J3-v 20%	See ch 6
86	Repeat #22	B17				Pot 35	J4-m 20%	See ch 6
87	Repeat #23	B82				Pot 35	J5-i 20%	See ch 6
88	Repeat #24	B131				—	J5-AA	Ground
89	Tank Manifold Press. +Y	B202	0-300 PSIG	1616163-17 W		Pot 17	J4-v 79%	01110101
90	Message Acceptance Pulse	H-38	0-5V.	SS/H		—	J5-B	MAP
91	Yaw Gyro Torque Rate	D65	10 Deg/Sec ~~0-5V.~~	SS/D		Pot 6	J4-x 50%	See ch. 61
92	Repeat #8	D-151				Pot 5	J4-M 98%	See ch 8
93	Repeat #5	B-91				Pot 33	J4-k 2.5%	See ch 5
94	Roll Gyro Torque Rate	D66	0-5V.	SS/D		Pot 8	J5-BB 50%	See ch 28
95						—	J5-a	Ground
96	Subframe 'A'	NA				—		SFA

LOCKHEED AIRCRAFT CORP. MISSILES & SPACE DIVISION SUNNYVALE, CALIFORNIA

TITLE:

PCM - TELEMETER

Link No. 1 Multiplexer Main Sample Rate 16 No. Chan. 128

Chan.	MEASUREMENT	Meas. No.	Xducer Range	Volt Source or Xducer Type	Mfg	Xducer Loc. Sta/Quad	Input Plug	Installation Dwg. No.
97	+Y SPS Gas Sphere Press.	B-200	0-4500 PSIG	1616164-19 W		Pot 16	20% J3-P	01001100
98	Repeat #34	A-522				Pot 35	20% J3-Z	See ch 6
99	Repeat #15	D-150				Pot 5	98% J3-W	See ch 8
100	Repeat #36	A-5				Pot 35	20% J3-H	See ch 6
101	Repeat #37	B-212				Pot 35	20% J3-DD	See ch 6
102	Pitch Gyro Torque Rate	D-73	10 Deg/Min 0-5V. Vo	SS/D		Pot 3	50% J4-T	10111110
103	Repeat #39	B-214				Pot 35	20% J5-g	See ch 6
104	Repeat #40	B-130				—	J5-GG	Ground
105	Tank Manifold Press. -Y	B-203	0-300 PSIG	1616163-17 W		Pot 17	70% J4-L	See ch 89
106						—	J4-Z	Ground
107	Booster Cmd. Monitor	D-37	0-5V	SS/D		Pot 37	60% J4-N	See ch 9
108						—	J4-g	Ground
109	Cal. Z	NA	0.00V.	Telemeter		Pot 21	89% J4-AA	See ch 13
110	Repeat #46	B-132				Pot 35	20% J5-EE	See ch 6
111						—	J5-F	Ground
112	Subframe 'A'	NA				—		SFA
113	-Y SPS Gas Sph. Press.	B-201	0-4500 PSIG	1616164-19 W		Pot 16	20% J3-K	See ch 97
114	Repeat #30	D-152				Pot 5	98% J3-K	See ch 8
115	Repeat #5	B-91				Pot 33	2.5 J3-EE	See ch 5
116	Repeat #52	A-9				Pot 8	50% J3-G	See ch 28
117	Repeat #53	B213				Pot 36	40 J3-F	See ch 53
118	Repeat #54	D86				—	J4-W	Ground
119	Repeat #55	B215				Pot 34	40% J5-X	See ch 53
120	A/A Sep. Monitor	A-14	0-5V.	1613821-1		Pot 37	60% J5-U	See ch 9
121	Fwd. Compt. Pressure	A20	0-15 PSIA	1615046-1 W		Pot 37	60% J4-DD	See ch 9
122						—	J4-FF	Ground
123						—		Ground
124	Subframe 'C'	NA	(See page 20 & 21)			—		SFC
125	Fuel Pump In. Press.	B1	0-100 PSIG	1616163-9 W		Pot 36	40% J5-V	See ch 9
126						—	J5-J	Ground
127						—	J5-E	Ground
128	Subframe 'A'	NA				—	J2-D	SFA

LOCKHEED AIRCRAFT CORP.
MISSILES & SPACE COMPANY
SUNNYVALE, CALIFORNIA

TITLE:

Sheet 11 of 27

PCM - TELEMETER

Link No. 1 Multiplexer Sub. A Sample Rate 1 No. Chan. 128

Chan.	MEASUREMENT	Meas. No.	Xducer Range	Volt Source or Xducer Type	Mfg	Xducer Loc. Sta/Quad	Input Plug	Installation Dwg. No.
1	H/S Fairing Temp.	A-210	32° 600°F	1062939-11	TS		J2-C	
2	Fuel Feed Line Temp. Unit I+Y	B-266	-50° +150°F	1616310-5	MS		J2-T	
3	+ Z Aft. Bulkhead Temp.	A154	-100° +400°F	1062939-9	TS		J2-R	
4	Battery Buss Current	C-4	0-100A	SS/C		POT 8	J3-t 50%	See MKC 28
5	Shear Panel Temp. #1	A-150	-100° +120°F	1618702-3 161639[illegible]	F		J3-CC	
6	+Y & -Y Ox. Tank Heaters	B-256	0-5V.	+Y= -Y=			J4-U	
7	+Y SPS. Mod. Bulkhead T.	A-156	-100° +400°F	1062939-9	TS		J5-s	
8	Fuel Feed Line Temp. UnitII+Y	B-267	-50° +150°F	1616310-5	MS		J5-FF	
9	Docking Adapter Temp. #1	A-388	-100° 500°F	1616310-1	MS	210/	J4-EE	
10							J4-Y	
11	Ox. Start Tank Temp.	B-141	-100° +300°F	1616310-1	TS		J4-j	
12	~~C & C Buss Voltage~~ FWD. PWR. TRANSFER SW.	H-358	0-5V.	SS/C			J4-X	
13	Fuel Start Tank Temp.	B-142	-10° +300°F	1616310-1	TS		J5-HH	
14							J5-V	
15							J5-D	
16	S-Band Input PRF Monitor	H-47	0-5V.	SS/H			J2-F	
17	Fuel Feed Line Temp. UnitI-Y	B-268	-50 +150°F	1616310-5	MS		J2-A	
18	-Z Aft. Bulkhead Temp.	A-155	-100° +400°F	1062939-9	TS		J2-P	
19	+28 VDC Reg. Pwr. Supply #1	C-3	0-5V.	SS/C		POT 11	J2-G 64	10000101
20	Docking Adapter Temp. #5	A-392	-100° +500°F	1616310-1	MS	210/	J3-E	
21	Shear Panel Temp. #2	A-151	-100° +120°F	1618702-3 161639[illegible]	F		J3-M	
22	+Y & -Y Fuel Tank Heaters	B-258	0-5V.	+Y= -Y=			J4-A	
23	-Y SPS Mod. Bulkhead T.	A157	-100° +400°F	1062939-9	TS		J5-H	
24	I+Y & I-Y Biprop. Valve Heaters	B238	0-5V.	+Y= -Y=			J5-W	
25	-28 VDC Reg. Pwr. Sup. #1	C-5	0-5V.	SS/C		POT 13	J4-f 54%	01100001
26	Docking Adapt. Temp. #2	A389	-100° +500°F	1616310-1	MS	215	J4-BB	
27	He. Sphere Temp.	B-68	0° 120°F	1618702-3 161639[illegible]	F		J4-i	
28	400 Cps 3 Ø Inv. (Ph. CB)	C-32	0-5V.	SS/C		POT 14	J4-C 82%	10110011
29	Thrust Chamb. Skin Temp.	B-83	-50° +150°F	1062939-11	TS		J5-d	
30							J5-CC	
31	~~Oxy. Feed~~ Line Temp. Unit I+Y	B260-	-50° +150°F	1616310-5	MS F		J5-C	
32	S-Band Output Pwr. Monitor	H-49	0-5V.	SS/H			J2-K	

LOCKHEED AIRCRAFT CORP.
MISSILES & SPACE COMPANY
SUNNYVALE, CALIFORNIA

TITLE:

PCM - TELEMETER

Link No. 1 Multiplexer Sub. 'A' Sample Rate 1 No. Chan. 128

Chan.	MEASUREMENT	Meas. No.	Xducer Range	Volt Source or Xducer Type	Mfg	Xducer Loc. Sta/Quad	Input Plug	Installation Dwg. No.
33	Shroud Temp. #1 (MT-401)	AD-40	0° 1450°F	1062939-1	TS		J3-f	Douglas Dwg. 5871946
34	400 cps 3 Ø Inv. (Ph. AB)	C-31	0-5V.	SS/C		P5T14	J3-n	82%
35	Ox. Pump Inlet Temp	B-32	-10° +150°F	1062960-1	TS		J3-HH	
36	Heater Cycling Monitor	D-15	0-5V.	SS/D			J3-b	
37	Shear Panel Temp. #3	A-152	-100° +120°F	1616394-1	F		J3-L	
38	Docking Adapter Temp. #6	A-393	-100° +500°F	1616310-1	MS	210	J4-S	
39	+Y Mod. Radiation Shd. Temp.	A-158	-100° +200°F	1062939-9	TS		J5-DD	
40	II+Y & II-Y Biprop. Valve Heat	B-264	0-5V.	+Y= -Y=			J5-e	
41	Docking Adapt. Skin T. #3	A-390	-100° +500°F	1616310-1	MS	220	J4-s	
42	V/M Accel. Oven Temp.	D-87	0° +165° 0-5V. F	SS/D		Incl. in Equip.	J4-CC	
43	+Y N2 Sphere Temp.	B-216	-500 +150°F	1616310-1	MS		J4-z	
44	UHF Phase Lock Monitor	H-171	0-5V.	SS/H			J4-p	
45	-Y N2 Sphere Temp.	B-253	-500 +150°F	1616310-1	MS		J5-p	
46							J5-c	
47	Ox. Feed Line Temp. Unit II+Y	B-261	-500 +1500°F	1616310-5	MS		J5-Z	
48	S-Band Transponder Temp.	H-49	0-5V.	SS/H		Incl. in Equip.	J2-j	
49	Shroud Temp. #2 (MT-402)	AD-41	0° +1450°F	1062939-1	TS		J3-AA	Douglas Dwg. 5871946
50	Ox. Pump Lip Seal Press.	B71	0-30 PSIA	1615046-3	W		J3-m	
51	Fuel Pump Inlet Temp.	B31	-100 +150°F	1461855-1			J3-p	
52	Docking Adapter Temp. #7	A-394	-1000 +5000F	1616310-1	MS	210	J3-r	
53	Shear Panel Temp. #4	A-153	-10° +120°F	1616394-1	F		J3-a	
54	#1 Valve Cluster Temp.	D46	-500 +150°F	1600397-5	F	Incl. in Equip.	J4-n	
55	-Y Mod. Rad. Shd. Temp.	A-159	-100° +2000F	1062939-9	TS		J5-A	
56	400 cps 1 Ø Pwr. Supply	C-35	0-5V.	SS/C			J5-f	
57	Docking Adapt. Skin T. #4	A-391	-100° 500°F	1616310-1	MS	225	J4-HH	
58	C-Band In. PRF Monitor	H-173	0-500 pps 0-5V.	SS/H		Incl. IN Equip.	J4-w	
59	Unit I+Y Biprop. Valve Temp.	B-233	-500 +250°F	1616310-1	MS		J2-N	
60	Unit I Mod. +Y Inj. Temp.	B-240	-1000 +200°F	T/C			J4-B	
61	C-Band Transponder Temp.	H-172	-58° +212° 0-5V. F	SS/H		Incl. in Equip.	J5-W	
62	C-Band Out. PRF Monitor	H-174	0-500 pps 0-5V.	SS/H		Incl. IN Equip.	J5-b	
63	Ox. Feed Line Temp. Unit I-Y	B-262	-500 +150°F	1616310-5	MS		J5-Y	
64	Programmer B+ #1 (+5.7)	H-29	0-5V.	SS/H			J2-M	

LOCKHEED AIRCRAFT CORP. MISSILES & SPACE COMPANY SUNNYVALE, CALIFORNIA

TITLE:

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PCM - TELEMETER

Link No. 1 Multiplexer Sub. 'A' Sample Rate 1 No. Chan. 120

Chan.	MEASUREMENT	Meas. No.	Xducer Range	Volt Source or Xducer Type	Mfg	Xducer Loc. Sta/Quad	Input Plug	Installation Dwg. No.
65	Shroud Temp. #3 (MT-403)	AD42	0° 300°F	1062939-1	TS		J3-i	Douglas Dwg. 58719h6
66	+28 VDC Reg. Sup. #2	C-2	0-5V	SS/C		P0712	J3-Y 52%	01100001
67	Skin Temp. Unit #I+Y.	B246	320 2800°F	T/C			J3-g	
68	-28 VDC Reg. Sup. #2	C-121	0-5V.	SS/C		P0713	J3-c 54	See ch 25
69	Ox. Tank Temp. (+Z)	B-136	-150° +170°F	1618702-3 1616391-1	F	Patty	69% J3-CC	See MT ch 38
70	Programmer B+ #2 (+40)	H-28	0-5V.	SS/H			J4-V	
71	Fuel Tank Temp. #1	B-96	300 900F	1618702-3 1616391-1	F		J5-r	
72							J5-n	
73	Nozzle Ext. Skin Temp. #1	B-184	-200° +800°F	T/C			J3-N	
74	Programmer B+#3 (+60)	H-27	0-5V.	SS/H			J4-r	
75	Unit I.-Y Biprop. Valve Temp.	B234	-500 +250°F	1616310-1	MS		J4-y	
76	Clock Temp.	H-6	-30° +165°F	1062939-7	TS	Incl. in Equip.	J4-h	
77	Unit I Mod. -Y Inj. Temp.	B-241	-100° +200°F	T/C			J3-F	
78	Programmer B+ #4 (-5.7)	H-30	0-5V.	SS/H			J5-u	
79	Ox. Feed Line Temp. Unit II-Y	B-263	-50° +150°F	1616310-5	MS		J5-G	
80	Docking Cone Unrigidized	H-379	0-5V.	MAC			J2-L	
81	Shroud Temp. #4 (MT-404)	AB-43	0° 300°F	1062939-1	TS		J3-x	Douglas Dwg. 58719h6
82	Command Controller(+6)	H-35	0-5V.	SS/H			J3-T	
83	Skin Temp. Unit #I-Y	B-247	320 2800°F	T/C			J3-d	
84	Memory Temp.	H-7	-30° +165°F	1062939-7	TS	Incl. in Equip.	J3-s	
85	Ox. Tank Temp. -Z	B-137	300 90°F	1618702-3 1616391-1	F		J3-v	
86	UHF Rcvr. Sig. Level	H-60	-133-103 0-5V. lbw	SS/H		Incl. IN Equip.	J4-m	
87	Fuel Tank Temp. #2	B-97	0° 100°F	1618702-3 1616391-1	F		J5-i	
88	Dest. Rcvr. #1 Case Temp.	H357	-50° +200°F	1616310-1	MS		J5-AA	
89	Nozzle Ext. Skin T. #2	B-185	-200° +800°F	T/C			J4-v	
90	Dest. Rcvr. #2 Sig. Level	H364	0-5V.	SS/H			J5-B	
91	Unit II + Y Biprop Valve Temp.	B235	-50° +250°F	1616310-1	MS		J4-x	
92	Safe-Arm-Fire (Dest. #1)	H-101	0-5V.	SS/H			J4-M	
93	#1 Reg. D.C. Conv. Temp.	C-185	00 200°F	1616310-1	MS		J4-k	
94	L-Band Boom Ant. Extend	H-347	0-5V.	MAC			J5-BB	
95	400 cps 3ØInv. Temp.	C-21	0-5V.	SS/C		Incl. in Equip.	J5-a	
96	Cal. +	NA	4.9V.	Telemeter			J5-n	

LOCKHEED AIRCRAFT CORP. MISSILES & SPACE COMPANY SUNNYVALE, CALIFORNIA

TITLE:

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PCM - TELEMETER

Link No. 1 Multiplexer Sub. 'A' Sample Rate 1 No. Chan. 128

Chan.	MEASUREMENT	Meas. No.	Xducer Range	Volt Source or Xducer Type	Mfg	Xducer Loc. Sta/Quad	Input Plug	Installation Dwg. No.
97	Shroud Temp. #5 (MT-405)	AD-44	0° 400°F	1062939-1	TS		J3-P	Douglas Dwg. 5871946
98	Dest. Rcvr. #1 Sig. Level	H-354	0-5V.	SS/H			J3-z	
99	Skin Temp. Unit #II +Y	B-248	320 2300°F	T/C			J3-w	
100	Prog. Power Supply Temp.	H-33	-30° +165°F	1062939-7	TS	Incl. in Equip.	J3-H	
101	Battery Case Temp. #1	C-10	0° 200°F	1616310-1	MS		J3-DD	
102	UHF Rcvr. B+	H57	0-5V.	SS/H			J4-T	
103	Battery Case Temp. #2	C-13	0° 200°F	1616310-1	MS		J5-g	
104	UHF Rcvr. Temp.	H-59	~~-30° +165°~~ 0-5V. F	SS/H		Incl. in Equip.	J5-GG	82% Pat. 14 See ck 28
105	#2 Reg. DC Conv. Temp.	C-186	0° 200°F	1616310-1	MS		J4-L	
106	Dest. Rcvr. #2 Case Temp.	H-367	-50° +200°F	1616310-1	MS		J4-Z	
107	Unit II-Y Biprop Valve Temp.	B-236	-50° +200°F	1616310-1	MS		J4-N	
108	Safe-Arm-Fire (Dest. #2)	H103	0-5V.	SS/H			J4-q	
109	Docking Cone Rigidized	H-380	0-5V.	MAC			J4-AA	
110	Fuel Feed Line Temp UnitII-Y	B-269	-50° +150°F	1616310-5	MS		J5-EE	
111	400 cps 1 Ø Inv. Temp.	C-163	0-5V.	SS/C		Incl. in Equip.	J5-F	
112	L-Band Xmtr. Tube Temp.	H-333	~~-103° +176°~~ 0-5V. F	MAC		Incl. in Equip.	J2-E	
113	Shroud Temp. #6 (MT-406)	AD-45	0° 400°F	1062939-1	TS		J3-K	Douglas Dwg. 5871946
114	PCM Tray Temp.	H-180	-50° +200°F	1616310-1	MS		J3-k	
115	Skin Temp. Unit #II-Y	B-249	320 2300°F	T/C			J3-EE	
116	VHF Xmtr. #1 Case Temp.	H-62	-50° +200°F	1616310-1	MS		J3-G	
117	Docking Cone Unlatched	H-381	0-5V.	MAC			J3-f	
118	Cal. Z	NA	0.00V.	Telemeter			J4-W	
119	#2 Valve Cluster Temp.	D47	-50° +150°F	1600397-5	F	Incl. in Equip.	J5-X	
120	VHF Xmtr. #2 Case Temp.	H63	-50° +200°F	1616310-1	MS		J5-U	
121	Coder Lock-On Monitor	H-52	0-5V.	MAC			J4-DD	
122	V/M Elec. Oven Temp.	D-85	0° +185° 0-5V. F	SS/D		Incl. in Equip.	J4-FF	
123	Sync - A_1						J2-S	
124	L-Band Face Plate Temp.	H-334	~~-103° +176°~~ 0-5V. F	MAC		Incl. in Equip.	J2-H	
125	Battery Case Temp. #3	C-22	0° 200°F	1616310-1	MS		J5-v	
126							J5-J	
127	L-Band RF Pwr. Level	H-331	1.5 volts/Amp 0-5V.	MAC			J5-E	
128	Sync - A_2						J2-D	

LOCKHEED AIRCRAFT CORP.
MISSILES & SPACE COMPANY
SUNNYVALE, CALIFORNIA

TITLE:

MAIN MUX.

16 SPS

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A GROUP DIVISION OF LOCKHEED AIRCRAFT CORPORATION

SUNNYVALE, CALIFORNIA

TITLE

SUBFRAME "A"

1 M.	2 F. Sync	3	4 * H38 MA	5 * B-91	6 A523	7 * C-6	8 D151	9 * B225	10 10-50% B-2	11 B223	12 B-10	13 * B-224	14 * 67-91.7% B-9	15 D150	16
17 Subframe	18 B	19	20 A-4	21 B-148	22 * B-17	23 66.7% B-82	24 B-131	25 * 66.7% B-11	26 D-68	27 91% B-91	28 D-42	29	30 D-152	31 D-60	32
33 D-58	34 A522	35 * D-59	36 A-5	37 B-212	38 * D-70	39 B-214	40 B-130	41 Cal.+	42 D-69	43 D-41	44 * 12.7-38.4% B-8	45 * D-75	46 B-132	47 * H38 MA	48
49 B-91	50 D-151	51 B204	52 A-9	53 B-213	54 D-86	55 B-215	56 A-52	57 D-150	58 D-32	59	60 B-209	61 * D-74	62 * 66.7% B-12	63	64
65 * 0-75% B-7	66 * C-130	67 B208	68 * C-131	69 D-57	70 A523	71 B-91	72 D-152	73 B-145	74 A-21	75 B-146	76 * D-72	77	78	79 D-5	80
81 60% B-3	82 * C-132	83 B205	84 A-4	85 B-148	86 B-17	87 66.7% B-82	88 B-131	89 * B202	90 * H38 MA	91 D-65	92 D151	93 B-91	94 D-66	95	96
97 B200	98 A522	99 D-150	100 A-5	101 B-212	102 D-73	103 B-214	104 B-130	105* B203	106	107 D-37	108	109 Cal.Z	110 B-132	111	112
113 B201	114 D-152	115 B-91	116 A-9	117 B-213	118 D86	119 B-215	120 A-14	121 A-20	122	123	124* S.F!C	125 16-50% B-1	126	127	128

* = Real Time Readout

Subframe 'B' = H-32 Programmer Memory Readout

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SUB. MUX. "A"

1 SPS

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A GROUP DIVISION OF LOCKHEED AIRCRAFT CORPORATION

SUNNYVALE, CALIFORNIA

TITLE

FORM LMSC 2229-1

1 T	2 T	3 T	4 V	5 T	6 TT	7 T	8 T	9 T	10	11 T	12 V	13 T	14	15	16 SV
A-210	B-266	A-154	C-4	A150	B-256	A156	B-267	A388		B-141	H-358	B142			H-47
17 T	18 T	19 V	20 T	21 T	22 TT	23 T	24 TT	25 T	26 V	27 T	28 V	29 T	30	31 T	32 SV
B-268	A-155	C-3	A-392	A151	B258	A157	B238	C-5	A-389	41.7% B-68	C-32	33.3% B-83		B-260	H-48
33 T	34 V	35 T	36 TT	37 T	38 T	39 T	40 TT	41 T	42 T	43 T	44 SV	45 T	46	47 T	48 T
AD40	C-31	15% B-32	D-15	A152	A-393	A158	B-264	A390	D-87	B-216	H-171	B-253		B-261	H49
49 T	50 P	51 T	52 T	53 T	54 T	55 T	56 V	57 T	58 SV	59 T	60 T	61 T	62 SV	63 T	64 V
AD41	56.1% B-71	75% B-31	A-394	A153	D-46	A159	C-35	A391	H-173	B-233	B-240	H-172	H-174	B-262	H-29
65 T	66 V	67 T	68 V	69 T	70 V	71 T	72	73 T	74 V	75 T	76 T	77 T	78 V	79 T	80 TT
AD42	C-2	B-246	C-121	B-136	H-28	B-96		B-184	H-27	B-234	H-6	B-241	H-30	B-263	H-379
81 T	82 V	83 T	84 T	85 T	86 SV	87 T	88 T	89 T	90 SV	91 T	92 TT	93 T	94 TT	95 T	96
AD43	H-35	B-247	H-7	B-137	H-60	B-97	H-357	B-185	H-364	B-235	H-101	C-185	H-347	C-21	Cal.+
97 T	98 SV	99 T	100 T	101 T	102 V	103 T	104 T	105 T	106 T	107 T	108	109 TT	110T	111 T	112 T
AD44	H-354	B-248	H-33	C-10	H57	C-13	H-59	C-186	H367	B-236	H-103	H-380	B-269	C-163	H-333
113 T	114 T	115 T	116 T	117 TT	118	119 T	120 T	121 T	122SV	123 T	124	125 T	126 T	127SV	128
AD45	H-180	B-249	H-62	H-381	Cal.Z	D-47	H-63	C-22	H-52	D-85	$SyncA_1$	H-334		H-331	$SyncA_2$

T = Temp.
P.= Press.
V = Voltage
TT = Telltale
SV = Signal Voltages

SHEET 19 OF 27

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MISSILES & SPACE COMPANY

SUNNYVALE, CALIFORNIA

TITLE

SUBFRAME C

Direct Digital *

1	2	3	4	5	6	7	8
B-1-8 Cmd. Function Status	B-9-16 Cmd. Function Status	Vehicle Time Word		B-17-24 Cmd. Function Status	B 25-32 Cmd. Function Status	Turbine Speed	

9	10	11	12	13	14	15	16
B 33-40 Cmd. Function Status	B 41-48 Cmd. Function Status	Velocity Meter Stored Word		B 49-56 Cmd. Function Status	B 57-64 Cmd. Function Status	Turbine Speed	

*Chan. 124 of Main Mux.

For Breakdown of Cmd. Function Status, see Pg. 25 & 25 of this Spec.

FORM LMSC 2225-1

PCM - TELEMETER

Link No. 1 Multiplexer Sub 'C' Sample Rate 1 No. Chan. 16

Chan.	MEASUREMENT	Meas. No.	Xducer Range	Volt Source or Xducer Type	Volt Source or Xducer Mfg	Xducer Loc. Sta/Quad	Input Plug	Installation Dwg. No.
1	Command Function Status	H-34	(Bits 1 - 8)					
2	Command Function Status	H-34	(Bits 9 - 16)					
3	Vehicle Time Word	H-165	(LSB)					
4	Vehicle Time Word	H-165	(MSB)					
5	Command Function Status	H-34	(Bits 17-24)					
6	Command Function Status	H-34	(Bits 25-32)					
7	Turbine Speed	B-35	(LSB)					
8	Turbine Speed	B-35	(MSB)					
9	Command Function Status	H-34	(Bits 33-40)					
10	Command Function Status	H-34	(Bits 41-48)					
11	V/M Stored Word	D-88	(LSB)					
12	V/M Stored Word	D-88	(MSB)					
13	Command Function Status	H-34	(Bits 49-56)					
14	Command Function Status	H-34	(Bits 57-64)					
15	Turbine Speed	B-35	Repeat #7					
16	Turbine Speed	B-35	Repeat #8					

LOCKHEED AIRCRAFT CORP.
MISSILES & SPACE COMPANY
SUNNYVALE, CALIFORNIA

TITLE:

PCM - TELEMETER

Link No. _____ Multiplexer Ground Checkout Sample Rate _____ No. Chan. _____

Chan.	MEASUREMENT	Meas. No.	Xducer Range	Volt Source or Xducer Type	Volt Source or Xducer Mfg	Xducer Loc. Sta/Quad	Input Plug	Installation Dwg. No.
	Main Eng.							
	He. Sphere Press.	BGC 7	0-4000 PSIG	Flight Xducer		J100 4P		
	Ox. Tank Press.	BGC 8	0-60 PSIG	"	"	J100 4S		
	Fuel Tank Press.	BGC 9	0-60 PSIG	"	"	J100 4Q		
	Ox. Venturi Press.	BGC 11	0-1500 PSIG	"	"	J100 1C		
	Fuel Venturi Press.	BGC 12	0-1500 PSIG	"	"	J100 1D		
	Ox. Pump Lip Seal Press.	BGC 71	0-25 PSIG	"	"	J100 4X		
	Ox. Tank Temp.	BGC 136	0° +150°F	(BN-200) 1600293-5		J100 4C		
	Fuel Tank Temp.	BGC 95	0° 150°F	(BN-200) 1600293-5		J100 4H		
	He. Sphere Temp.	BGC 68	0° 150°F	1600293-5		J100 1E-3a		
	Ox. S/O Valve Open	BGC 130A		Micro sw. On Valve				
	Fuel S/O Valve Open	BGC 130B		Micro sw. On Valve				
	OX. START TANK TEMP. FUEL " " "	BGC 141 BGC 142	0° 150° F	1600293-5		J100 - 4R J100 - 4F	4E 4E	
	SPS Mod. +Y							
	N_2 Sphere Press.	BGC 201	0-4500 PSIG	Flight Xducer		J100 4D		
	Tank Manifold Press.	BGC 202	0-300 PSIG	"		J100 4Y		
	N_2 Sphere Temp.	BGC 216	0° 150°F	(BN-200) 1600293-5		J100 4D		
	Ox. Tank Temp.	BGC 260	"	"		J100 4E		
	Fuel Tank Temp.	BGC 262	"	"		J100 4F		
	SPS Mod. -Y							
	N_2 Sphere Press.	BGC 250	0-4500 PSIG	Flight Xducer		J100 4c		
	Tank Manifold Press.	BGC 203	0-300 PSIG	"		J100 4Z		
	N2 Sphere Temp.	BGC 253	0° 150°F	(BN-200) 1600293-5		J100 4 e		
	Ox. Tank Temp.	BGC 261	"	"		J100 4b		
	Fuel Tank Temp.	BGC 263	"	"		J100 4M		
	Control Gas Supply Temp. #1	DGC 70A	0 150°F			J100 1F-3a		
	Control Gas Supply Temp. #2	DGC 70B	0° 150°F	(BN-200) 1600293-5		J100 4f		

[illegible] AIRCRAFT CORP. TITLE: Sheet [illegible] of 27

PCM - TELEMETER

Link No. ATLAS - TM | Multiplexer | Sample Rate | No. Chan.

Chan.	MEASUREMENT	Meas. No.	Xducer Range	Volt Source Or Xducer Type	Volt Source Or Xducer Mfg	Xducer Loc. Sta/Quad	Input Plug	Installation Dwg. No.
	Booster Adapt Temp #1	A61	0-500°F	1062939-11	TS			
	Booster Adapt Temp #2	A62	0-400°F	"	"			
	Booster Adapt Temp #3	A63	0-400°F	"	"			
	Booster Adapt Temp #4	A64	0-400°F	"	"			
	B/A Strain Gage #1	A22	+200 -1000 u	1615388-1	BIH			
	B/A Strain Gage #2	A23	"	"				
	B/A Strain Gage #3	A24	"	"				
	B/A Strain Gage #4	A25	"	"				

LOCKHEED AIRCRAFT CORP.
MISSILES & SPACE COMPANY
SUNNYVALE, CALIFORNIA

TITLE:

COMMAND FUNCTION STATUS MONITOR
SUBFRAME 'C'

Chan.	Bit	Measurement	Binary '1'	Binary '0'	Pickup Points	Notes
1	1	C-Band Beacon	ON	OFF	Incl. in Equip.	
	2	S-Band Beacon	ON	OFF	Incl. in Equip.	
	3	Nose Cone Shroud	Jettisoned	Secure		
	4	Engine Start Seq. A	ON	OFF	Cmd. Cont.	
	5	ACS Gain Hi-Docked	ON	OFF	F/C J-Box	
	6	Pitch/Yaw	Minus	Plus	FCLP Aux. J-Box	
	7	V/M Mode IV	ON	OFF	FCLP Aux. J-Box	
	8	Destruct Charge	Jettisoned	Secure		Could be jettisoned & then reset
2	9					
	10	Eng. Start Seq. B	ON	OFF	Cmd. Cont.	
	11	H/S Alpha Angle	Orbit	Ascent		
	12	Horizon Sensor	OFF	ON	FCLP Aux. J-Box	
	13	Recorder Record Status	ON	OFF	Incl. in Equip.	
	14	Pitch/Yaw Rate	Hi	Low	FCLP Aux. J-Box	
	15					
	16	Pitch/Roll H/S Gain Hi	ON	OFF	FCLP Aux. J-Box	
5	17	MSB - VEH. Time Word	$\geq 2^{16}$ sec.	$< 2^{16}$ sec.	Programmer	
	18	Pitch H/S to Yaw IRP	ON	OFF	FCLP Aux. J-Box	OFF=Roll H/S to Yaw IRP
	19	ACS	OFF	ON	F/C J-Box	
	20	Helium Motor Valve	Open	Closed	Fwd. Pwr. Dist. Box	
	21	Engine Start Seq. C	ON	OFF	Cmd. Cont.	
	22	Recorder Reproduce Status	ON	OFF	Incl. in Equip.	
	23	Adapter Latch	Unlatched	Reset	FCLP Aux. J-Box	
	24	Adapter Latch	Latch Reset	Reset	FCLP Aux. J-Box	
6	25					
	26	Roll H/S to IRP	OFF	ON	F/C J-Box	
	27	V/M	Enabled	Disabled	FCLP Aux. J-Box	
	28	Boom Antenna	Extend	Reset	FCLP Aux. J-Box	
	29	Engine Stop Seq.	ON	OFF	Cmd. Cont.	
	30	Recorder Tape Direction	#2	#1	Incl. in Equip.	
	31	SPC Inhibit	Inhibited	Normal	Cmd. Cont.	
	32					

LOCKHEED
MISSILES & SPACE COMPANY

TITLE

Chan.	Bit	Measurement	Binary '1'	Binary '0'	Pickup Points	Notes
9	33	L-Band Beacon	ON	OFF	Fwd. Dist. Pwr. Box	
	34	Pitch H/S to IRP	OFF	ON	~~F/C~~ GUID. J-Box	
	35	Reset Timer	Overflow	Running	Cmd. Cont.	
	36					
	37	Adapter	rigidized	Reset	~~Aux. J-Box~~ FCLP	
	38	Reset Timer 1-min. Ind.	ON	OFF	Cmd. Cont.	
	39	Adapter	Unrigidized	Reset	~~Aux. J-Box~~ FCLP	
	40					
10	41	VHF Antenna Switch	Ascent	Orbit	Fwd. Dist. Pwr. Box	
	42	H/S to Yaw	Out of Phase	In Phase	Guidance J-Box	
	43	Hydraulics Gain	docked	Undocked	F/C J-Box	
	44	Ox. Pneu. Iso. Valve #1	Opened	Closed		
	45	Geocentric Rate	OFF	ON	~~Aux. J-Box~~ FCLP	
	46	Recorder OFF Status	OFF	ON	Incl. in Equip.	
	47	ACS Deadband	Narrow	Wide	~~Aux. J-Box~~ FCLP	
	48	ACS Pressure	Hi	Reset	~~Aux. J-Box~~ FCLP	
13	49	Agena Status Display	ON	OFF	~~Aux. J-Box~~ FCLP	
	50	Ox. Pneu. Iso. Valve #2	Opened	Closed		
	51	Pwr. Relay Reset	Reset	OFF	~~Aux. J-Box~~ FCLP	
	52	Pitch Rate Cmd.	ON	OFF	~~Aux. J-Box~~ FCLP	
	53	Geocentric Rate	Reversed	Normal	~~Aux. J-Box~~ FCLP	
	54	ACS Pressure	Low	Reset	~~Aux. J-Box~~ FCLP	
	55	ACS Gain Low	ON	OFF	~~Aux. J-Box~~ FCLP	
	56	Overspeed Shutdown Valve	ON	OFF		
14	57	Acq. Light	ON	OFF	~~Aux. J-Box~~ FCLP	
	58	ACS Gain Hi-Undocked	ON	OFF	~~Aux. J-Box~~ FCLP	
	59	Gyrocompassing	OFF	ON	~~Aux. J-Box~~ FCLP	
	60	Booster Adapter [illegible]	Jettisoned	Secure		
	61	Yaw Rate Cmd. [illegible]	ON	OFF	~~Aux. J-Box~~ FCLP	
	62					
	63	H/S Doors	Jettisoned	Secure		
	64					

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MISSILES & SPACE COMPANY

SUNNYVALE, CALIFORNIA

TITLE

T.T. BREAKDOWN

Meas. No.	Functions		Voltage	Location
B17	G. G. Latching Valve	Latched	3.5 v.	P- On
	" " "	Unlatched	2.5 v.	Engine Time
	Start Signal ON		1.5 v.	Delay Relay Box
B131	He. Control Valve	On	3.0 v.	Aux. J Box
		Off	0.0 v.	(Guid.)
	Ox. Pneu. Iso. Valve	On	2.0 v.	
		Off	0.0 v.	
B130	Ox. S/O Valve	Ox. Open	3.5 v.	4.5
		Ox. Closed	2.5 v.	Micro-Switches On Valves
	Fuel S/O Valve	Fuel Open	1.0 v.	
		Fuel Closed	.5 v.	3.0
B223	+Y Start Valve	On	3.0 v.	5.0
		Off	0 v.	Aft. Power Dist. Box
	-Y Start Valve	On	2.0 v.	
		Off	0 v.	
B224	Unit I+Y Pilot Sol.	On	3.0 v.	
		Off	0 v.	Aft. Power Dist. Box
	Unit II+Y Pilot Sol.	On	2.0 v.	
		Off	0 v.	
B225	Unit I-Y Pilot Sol.	On	2.0 v.	
		Off	0 v.	Aft. Power Dist. Box
	Unit II-Y Pilot Sol.	On	3.0 v.	
		Off	0 v.	

Abbreviations: Mfg.

W = Wiancko	BLH = Baldwin-Lima-Hamilton
S = Statham	CO = Con-Ohmic
TS = Trans-Sonics	
MS = Micro-Systems	
F = Fenwall	

Measurement Code:

Ox	= Oxidizer	Ext	= Extension
Press	= Pressure	Rcvr	= Receiver
Comb	= Combustion	Dest	= Destruct
Chamb	= Chamber	Conv	= Converter
Accel	= Accelerometer	Ant	= Antenna
Sol	= Solenoid	Prog	= Programmer
Eng	= Engine	Mon	= Monitor
Act	= Actuation or Actuator	Elec	= Electronic
He	= Helium		
Ctl	= Control		
Pneu	= Pneumatic		
Iso	= Isolation		
Hyd	= Hydraulic		
Reg	= Regulated		
Sup	= Supply		
S/O	= Shut-off		
H/S	= Horizon Sensor		
Pos	= Position		
Amp	= Ampere		
Hr	= Hour		
V/M	= Velocity Meter		
Sep	= Separation		
In	= Inlet		
Compt	= Compartment		
T	= Temperature		
Sph	= Sphere		
Cmd	= Command		
Sig	= Signal		
Pwr	= Power		
Mod	= Module		
Inv	= Inverter		
T/C	= Thrust Chamber		
Rad	= Radiation		
Xmtr	= Transmitter		
Shd	= Shield		
V	= Valve		
Out	= Output		
Inj	= Injector		